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ABSTRACT

Seventy-seven educable retarded adults (17- to 29-years old) who were former special education students were involved in the evaluation of a Forced Choice Self-Description Inventory (FCI) designed to measure community adjustment. Ss had been rated by their vocational rehabilitation counselors on a multiple criterion scale of community adjustment requiring ratings of "community integration", "employability", and "social adjustment". Ss were tested in their homes in an approximate 2-hour interview testing session. Project findings included a description of similarities and differences between the successful and non-successful Ss in terms of their reported social, schooling, employment, and present living conditions; measures of their social cue interpretation ability as determined by the Test of Social Inference (TSI); and their choices on the FCI. Subsets of items on the FCI clearly separated those Ss rated high by their vocational counselors from those rated low. The TSI data provided far less clear high-low group separations. (LS)

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WORKING PAPER NO. 75

Development of a Self-Description Test to Measure Community Adjustment of Mildly Retarded Young Adults

John deJung

June, 1974

These papers are intended primarily as informal communications to and among members of the Research and Training Center staff. The materials contained herein are generally not in final stages of refinement and are not intended for public release.

PREFACE

The problem posed to the writer a year ago went something like "How might you measure the community adjustment of mildly retarded young adults, how well are former special class students doing in their post high school world?" In large part the question was born of a need for criterion measures for evaluating an on-going high school work study program. But the question has legitimacy for much broader concerns. In a sense, its answer would contain a definition of "what community adjustment is."

The problem of defining anything is essentially one of gaining a consensus, an agreement among users of that "thing." The definition must at least meet the general expectations of those users who, on an implicit level at least, already "know" what that "thing" is. For more obtrusive or more simple "things" this consensus is readily obtainable from a polling of users. For other less denotable, more faceted "things" a convincing argument is needed. In the social sciences this argument frequently proceeds from an "opening out" of the to-be-defined thing; what are its parts and internal relationships? Another recourse is to exhort the fruitful consequences of adapting some particular definition, not the least of which is simply that we can then get on with the job. The most popular recourse is to leave the thing undefined, in effect to swing with "everyman's" definition. The definition of Community Adjustment for Retardates

seems to have been so left, that is, swinging.

It is widely (and wisely) acknowledged that the development of procedures and instruments for measuring a variable of interest depends on how that variable has been defined. The project reported in this paper is an attempt to get on with the measurement problem ahead of definition, at least, ahead of explicit definition. Starting with the premise that extremes are most reliably identifiable or in the present instance, that counselors working with adult retardates can differentiate their more successfully from their least successfully functioning clients, the project task essentially became one of looking for differences between these two client groups. This brief report summarizes what was done and with what yield.

In a major sense this is still an interim rather than a final report. The goal of an adequately tested product will require at least a second year's effort. A much more complete reporting is available to those readers requiring detailed data reference and guide for that continuing research. (Report of Project R12, Grant No. 16-P-56817/0-08.)

ACKNOWLEDGEMENTS

Acknowledgements for completion of past year's project activities are due many persons. Excellent cooperation was received from the Oregon Rehabilitation Services Division. The project director is especially indebted to the support of three of their counselors working with the retarded: Willa Davis, Eleanor Ribbans, and Pete Samulevich. Andrew S. Halpern, Director of the Research and Training Center in Mental Retardation at the University of Oregon, and Paul Raffeld, Center Research Associate, contributed considerable supportive and consultive time. Isabelle Littman served as project research associate during most of the project. Five advanced doctoral students studying with the Rehabilitation Training Program gave of themselves in time and effort in persevering pursuit during a hot summer session to bring in the data. These were Lou Beermann, coordinator, Gail Foss, Myles Friedland, Martoo Littlefield, and Elizabeth Steinbock. Carol Owens assisted in subject locating as well as in typing test materials and recording data. Helen Virgin contributed to the data analysis, and, finally, Jo Link struggled through the draft copies to produce this report.

Background and Rationale

Decades of professional literature document continued concern with assessment of remedial intervention and training programs for educable mentally retarded populations. Nevertheless, the problem of developing satisfactory post program criterion measures remains unresolved (Cobb, 1969; Goldstein, 1964; Stevens and Peck, 1968; Wolfensberger, 1967; Halpern, Raffeld, and Littman, 1973; etc.).

The argument that consideration of personal values and goals is critical to an understanding and prediction of behavior has been enjoined by such theorists as Heider, 1958; Rotter, 1964, 1966; Lefcourt, 1966, 1972; Feather, 1967, 1969; and Feather and Simon, 1971. Their research clearly indicates that such intrapersonal factors are potent in the determination of behavior. Though a sufficient understanding of these factors cannot be achieved without specifying the environmental influences that give rise to and sustain them (Rhodes, 1970; Barker, 1968; etc.), a more immediate step would seem to be the determination of those intrapersonal factors which differentiate the successful from the non-successful person. This paper summarizes a first year's effort in that direction. The research methodology evolves around the use of two comparison groups of educable retarded young adults (former special education students): one judged as successfully maintaining themselves in their community and the second, as poorly adaptive. Utilizing a forced choice self

description inventory administered in home interview situations, subsets of descriptive statements were identified which collectively differentiated the two groups. Additional test scores measuring the subject's social inferential ability (using the Test of Social Inference) and descriptions of his family, educational, social and occupational history (obtained from interview questioning) were also obtained for each subject.

Related Research and Instrumentation

The project began with the results of an extensive literature review of criterion variables employed in studying the community adjustment of mildly retarded persons (Halley and Halpern, 1972). The review included a categorization of over 600 variables used in the measurement of community adjustment found in project reports, monographs and other papers published over a 50 year period. Forty-four clusters of outcome variables were identified, 7 dealing with personal adjustment, 12 with socio-civil adaptation, and 25 with vocational adjustment.

Conjointly with the examination of the Halley-Halpern results, a number of more current instruments used to describe the social and vocational adjustment of retarded adults were also carefully examined. These included the Adaptive Behavior Scales developed at the Parsons State Hospital (Nihira, Foster, Shellhaas, and Leland, 1970), the Community Adaptation Schedule (Roen and Burns, 1968; Hammarback, 1969; Romo, 1970), the Home Community

Follow-Up Questionnaire (deJung and Crosson, 1968), and the Social Activities Questionnaire (Edmonson, 1970).

Together the foregoing several instruments are illustrative of the continuing and widely divergent approaches toward measuring the adjustment of retarded adults; clearly they include far too many emphases for any single scale development. To converge on the more current field emphases in considering community adjustment, a survey instrument containing 90 brief behavior statements encompassing a broad array of behavioral emphases was prepared and mailed to professional educators, counselors, and researchers. The 90 item survey instrument included 26 items relating to general functioning in the community (carrying on essential functions related to daily life, i.e., maintaining casual contacts, handling money, keeping healthy, etc.), 19 items dealing with socialization (displaying mature behavior, understanding and abiding by society's rules, functioning independently), 21 items dealing with interpersonal relations (obtaining satisfaction from contact with other people), and 23 items dealing with vocational skills (displaying appropriate work behavior as well as efficiency on the job). Items were to be judged as to how important it was that this information be obtained "when evaluating how well a young retarded adult is adapting to community life." The responses (N=28) indicated both very high interrater agreement and high ratings of importance given practically all 90 behaviors. Apparently, few respondents were willing to say, in effect, "No, not important" to more than a very few of the 90

behaviors offered.

Procedures

Proceeding from the argument that (1) the starting task in measuring community adjustment is defining the criterion, i.e., deciding which variables are to be included and not included in measuring it, and (2) that this definition of community adjustment may perhaps be best determined empirically from those actual behavioral and attitudinal differences between more successfully adjusted and less successfully adjusted persons (rather than by variables selected on the basis of popular usage or by professional consensus), a comparisons group approach was developed for defining community adjustment. Essentially, this approach involved: (a) an initial identification of a high (successful) and a low (unsuccessful) group, (b) comparing the responses of these two groups to a broad spectrum of behavioral and attitudinal questions, and (c) selecting those questions responded to differently by the two groups. These selected questions would then be developed into a tentative community adjustment inventory. Cross validation and response repeatability checks would be needed to eliminate unreliable and/or chance selected items (questions).

Instruments

Prior to the major testing program, trial interviews were conducted to examine the scope of available information regarding

the S's personal and social behaviors. An interview "package" of (1) general information questions, (2) a previously developed social inference test, and (3) an experimental paired-comparison test was prepared. The information questions dealt with the S's schooling, employment history, living situation, and leisure time activities. The Test of Social Inference (TSI) is a picture interpretation test developed for measuring social understandings of mildly retarded adolescents (Edmonson, deJung, Leland, and Leach, 1971). In addition to a set of pictures, the TSI includes standardized questions, probes, and scoring guides for crediting inferences (which the subject develops from the picture) regarding the social scene depicted or suggested by the pictures. Though subsequent extensive testing involving geographically dispersed samples of normal and mildly retarded subjects has provided both normative data and support for test "validity" (deJung, Holen, and Edmonson, 1973), the test has not generally been used with adult populations. In the current study a 14 picture short form was administered requiring approximately 15 minutes to administer.

The major test instrument used in the study was a forced choice self description inventory (FCI). The forced choice format was selected to counter problems of low level of responsiveness among S's. The inventory consists of 69 statements grouped into five headings and selected from an initial pool of 100 statements describing behavior skills, attitudes and preferences possibly relevant to the community functioning of the prospective subject

population. These five groupings are:

1. Personal care (12 statements such as "You know how to keep yourself fit," and "You pick up after yourself.")

2. Managing money (12 statements such as "You borrow when it is necessary," and "You are generally surprised when you run out of money.")

3. General behavioral rules or guides (12 statements such as "You like to feel useful" and "You think that luck counts a lot in making it.")

4. Work habits and attitudes (21 statements such as "You do more than your share" and "You work hard when you need to.")

5. Values or goals (12 statements such as "Having other people like you," and "Having a steady job.")

In preparing the forced choice format these groups were split into subsets of six or seven statements and paired comparison items formed by matching every statement within a subset with every other statement in that subset. The 183 items thus formed were mounted on a pair of rings and shown to the subject one at a time. The general instruction for four of the five item groupings was to pick the statement that "you feel is most like you." For the final value items the instruction was "pick the statement that you feel is most important for you to have a good life." Administration of the 183 FCI took from 40 to 60 minutes to administer with either the subject or the administrator reading the statements aloud.

A further test, the Statement Ranking Report, was also prepared for administration to the S's parent or other in-residence adult following the subject interview. Essentially the SRR was developed as a companion instrument to the FCI to provide secondary

confirmatory data regarding the subject's responses on the FCI. The Ranking Report required the informant to rate and then rank the 69 FCI statements (within subsets of six or seven) according to how true they were of the subject or, in the case of the value statements, to the extent these latter statements reflected the subject's views.

Though the ranking report required only approximately 20-30 minutes to administer, because of scheduling problems and frequent adult unavailability only 19 resident adults were tested. An additional problem became apparent in terms of task difficulty; the instruction to "rank order statements" (within subsets) in terms of "how true they are of the subject" is possibly unmanageable by many parents. Revision of the SRR is clearly needed. Since the examination of the SRR data was limited to cursory inspections, it will not be further discussed in this report.

Sample and Counselor Ratings

The potential test development sample consisted of 123 former work-study high school students identified as former or present clients[1] by three vocational counselors employed in the Eugene and Springfield, Oregon offices of the State Department of Vocational Rehabilitation. Recent graduates were excluded because of limited post-school experience. The counselors were then requested to judge

[1]Hereafter referred to either as ex-clients or subjects.

these clients as to their degree of success on three criteria: (1) "integration into the community," (2) "employability," and (3) "social adjustment." The anchor points for these judgments were to be the "most successful" and "least successful" clients (in relation to these dimensions) known to the counselors. Counselor judgments on each of these criteria were made along a graduated four-inch line which was later developed to provide translation into a zero to four rating. Subsequent analyses revealed that ratings made of the same client on the three criteria tended to be similar though occasional exceptions (i.e., a client rated high on employability but low on social adjustment) did occur. The correlations between the three scales were .71 between the "integration" and "employability" scales, .86 between the "integration" and "socialization" scales and .56 between the "employability" and "socialization" scales.

In accordance with the project need for comparing an above average (successful) adjusted group with a below average (unsuccessful) adjusted group, classification criteria principally involved the extreme ratings on the "integration into community" scale. Thirty-four listed persons were identified in the high group, 48 in the middle group, and 41 in the low group. Though CA, IQ, and years out-of-school were only slightly different for the three groups (averages of 22 and 23 years of age, averages of from 66 to 75 IQ and averages of from 3.2 to 5.0 years since attending school), the ratio of males to the females was 25 to 9 in the high group and

almost fifty-fifty splits in the middle and low groups (ratios of 26 males to 22 females for the middle group and 21 males to 20 females for the low group). Clearly, proportionately fewer former special class girls were judged successfully adjusted to post high school community living by their vocational counselors than were former special class boys.

Not all of the 123 rated clients were available for testing. Sixteen were unlocatable during the six week testing period and another 21 were located but too distant for contact. Phone or personal contacts were made with 86 of the 123 rated clients. Nine of these clients chose not to further participate in the study. Employing a team of four trained interviewers, test data were obtained from 77 subjects, 43 men and 34 women. In addition, 19 adults living with the subjects (principally parents) completed the Statement Ranking Report. The testing was conducted in the subject's home. The tested subjects were similar in age, IQ, and sex distribution to the total 123 ex-client sample. Twenty-six of the tested clients (19 males and 7 females) were from the high rated or "successful" groups, 25 (13 males and 12 females) from the middle rated group and 26 (11 males and 15 females) from the low rated group. The mean IQ for the tested clients was 71 with a standard deviation of 11 points. The age range was 17 to 29 years with a mean of 22 years. The tested clients had been out of school an average of over three and a half years.

Analysis of Results

The major contribution of the Background Questionnaire Interview data is a descriptive contrast of the high, middle and low adjustment groups. All but one male in the high group, two males in the middle group and two males and three females in the low group had graduated from high school. The low adjustment group was slightly older and had been out of school a year to two years longer than the other two groups (an average of five years contrasted with just over three years for the more successful groups). Reported usefulness of school was very similar in all three groups, approximately forty percent in each group reporting that their work study courses were the most helpful and another 24 percent reporting that "nothing in school was helpful."

Though marked high-middle-low group differences were expected in employment due to the classification criteria used, the actual differences obtained were not very large; employment (counting housewives as employed) ranged from 92 percent in the high group, to 80 percent in the middle group and 69 percent in the low group. A more pronounced difference, however, was in types of job with 8 of the 9 sheltered jobs reported held by low success S's; in effect, only five of the 26 low S's had "regular" income producing jobs as contrasted with 23 of the 26 high S's.

In many instances such as satisfaction with employer, other employees, present living conditions and number of siblings,

responses from the three groups were quite similar. One more pronounced difference was in the numbers of S's presently living with their parents, 19 in the low group, 11 in the middle group, and 8 in the high group. In general, the differences found between groups other than those mentioned here were generally minor both in size and in probable implication. The sample descriptions, though necessary in reporting, are not necessarily revealing of relationships with successful-unsuccessful community adjustment.

The TSI data supports the anticipated relationship between more successful community adjustment and ability to interpret the social scene included in the TSI pictures. The difference obtained between the mean correct TSI score of 9.1 for the high group, 8.6 for the middle group and 7.0 for the low group yielded an F of 3.16 significant at the .05 level of confidence. The correlation between the TSI and the sum of the counselor's ratings on the three scales was .26. Though considerable score overlap was found between the high, middle and low samples in the middle TSI score range, considerable success-non-success sample separation was found at either extreme of the TSI score distribution. Only five low success subjects and six middle success subjects as contrasted with ten (nearly forty percent) high success subjects earned credit for more than 10 pictures, and no high success subjects, as contrasted with five low and two middle success subjects, scored less than four pictures correct. Quite possibly a longer (only 14 of the total

35 pictures for TSI are used in the short form) or more difficult set of pictures would have further separated these samples.

As described earlier, the Forced Choice Self Description Inventory was prepared as a broad coverage, experimental organization of paired comparison statements to be keyed empirically on the bases of differences in responses of highly rated and low rated clients. The first question asked of the FCI data was whether the required test procedure, that of rationally selecting a statement "which is more like you" was manageable by the intended respondents, i.e., were the instructions and stimuli sufficiently well presented and understood by the test taker that his responses denoted other than a failure or inability to do that which is asked of him? This query is particularly a concern in "forced choice" testing of retarded persons requiring discriminating among verbal stimuli.

Only one of the 77 S's receiving the 183 item FCI provided clearly invalid data, in this instance, a persisting A-B-A-B-A-B pattern throughout the test.[1] Since in preparing the FCI items, position effects and item orders had been "randomly" shuffled, the occurrence of a "meaningful" A-B-A-B-A-B response pattern is extremely remote.

On the other hand, the occurrence of a "perfect" or noncontradictory sequence of preferences within an FCI subset provides

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[1]Another test was unusable because of an examiner error in recording responses on an answer sheet.

strong evidence for task understanding. In a 15 item subset of six statements, each matched with every other one, a perfect sequence would be one in which the most preferred statement was chosen five times, the next most preferred statement chosen four times, the next chosen three times, the next, two times, the next, one time, and finally none, yielding a 5, 4, 3, 2, 1, 0 sequence. Similarly, in a 21 item set of seven statements, the perfect sequence would be 6, 5, 4, 3, 2, 1, 0.

It should be noted that two conditions are required for perfect or near perfect patterns, the first dealing with item content and the second with subject response. To achieve a perfect pattern the items must be scaleable, that is, unidimensional. Items which cannot be ordered on some common "underlying" criterion cannot, except by chance, yield perfect patterns. Though the FCI items were not prepared to achieve a general (across subjects) unidimensionality within subsets of FCI items (the test development paradigm required only grouping by general areas), it is, of course, possible that respondents are able to set their preferences for subsets of items along some single criterion, either implicitly or explicitly.

The second condition is that the respondents rationally perform the task discriminations, attending, in effect, to that common underlying criterion in choosing between the paired statements. In a set of six items, the probability of obtaining a "perfect" pattern by chance is 2^{10} or roughly once in 1000 times. For a set of seven items, the probability of obtaining a perfect pattern by chance is

2^{15} or roughly one in 33000 times. Since the total FCI consisted of 11 item subsets, eight subsets involving six items and three involving seven items, the probability of one or more "perfect" patterns by chance is slightly less than once in a hundred. Applying these probabilities to the sample of 75 subjects completing the FCI, only one or two perfect patterns would be expected from this sample due to chance. Examination of the FCI data revealed occurrences of perfect response patterns far in excess of chance expectation. Excepting two of the seven item work habit sets, every FCI item subset was responded to with a perfect pattern by from a third to a fourth of the subjects. In all, nearly 200 perfect patterns were produced by the 75 responding subjects. Only ten subjects had no perfect patterns; half of the subjects produced three or more perfect patterns. The average numbers of perfect patterns was 3.0 for the higher rated clients, 2.4 for the middle rated clients, and 2.3 for the low rated subjects, indicating at best only minor relationship to group designation. Fatigue factors did not appear to enter in, either; there were easily as many perfect patterns for the last administered subjects (Values and Goals) as for the subtest administered first. Further inspection of the data revealed that most of the nonperfect pattern deviated from perfect by one reversal. The chance probability for this close (to perfect) pattern was roughly once in 60 for a set of six items and once in 100 for a set of seven items.

Clearly the subjects' pattern of responding cannot be

accounted for by chance behavior. Stated more positively, it is to be concluded that the task requirements of the very lengthy 183 item FCI were not beyond the response capabilities of the young retarded adults tested in the study. On all subsections of the test they were producing "perfect" and near perfect patterns far in excess of chance occurrence indicating that they were rationally managing the paired performance task, i.e., they were choosing alternative statements within subsets of 15 to 21 items consistent with some underlying criterion for choosing these items.

The project plan called for the identification and empirical keying of those FCI items which were responded to differently by successfully and nonsuccessfully adjusting young retarded adults. For this purpose a comparison was made of the numbers of high and low rated clients selecting either the A or B alternative for each of the 183 FCI items. None of the middle rated group data was considered in these comparisons.

Examination of high-low group differences in FCI responses revealed that nearly a fourth of the 183 FCI items yielded significant (greater than chance at the .05 level) differences between responses by high success and low success subjects. None of these differences were extreme, however. For only 19 items were there as many as seven more subjects in the high group selecting an A or B alternative than in the low group (or vice versa). Another 17 items had differences of six subjects. For these items (given an approximately equal selection of both statements A and B by the combined high-low

group), phi coefficients would be in the low .20's to .25. Though for single items these coefficients were small, given a reasonable degree of interitem independence a pooling of, say, fifty such items could be expected to achieve a substantial total test-criterion correlation.[1]

Further examination of the FCI item response data revealed a number of items with evident sex differences; i.e., statement choice within some items related to sex rather than to successful-nonsuccessful community adjustment or interactively to both sex and adjustment. To avoid "cancelling" effects in pooling items with contrary sex biases, three different experimental item pools were developed. One item pool for male respondents utilized the 50 items best discriminating between the high and low rated males, one for female respondents utilized the 50 items best discriminating between high and low rated females, and the third for both sex groups utilized the 40 items (after removing items with evident sex biases) best discriminating between the total group of high rated and low rated subjects. The average discriminatory power of the selected items (measured as the average of the differences between the proportion of the high and low rated subjects choosing either statement A or B in an item) was .34 for the 50 item male tests and .31

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[1]That is, given a fifty-item test with an average item criterion correlation of .20, and an average interitem correlation of .10, the correlation of the total test score (sum of 50 items) and the criterion would be near .60. In a 25 item test these same item statistics would produce a total test-criterion coefficient of nearly .55.

for both the 50 item female test and for the 40 item male-female test.

In support of the decision to develop separate FCI tests for males and females, only 13 of the items from the 50 item male test were found to be also included in the 50 item female test. The 40 item male-female test on the other hand was found to have 21 items from the 50 item male test and 16 items from the female 50 item tests. Seven of these overlapping items were common to all three tests.

In addition to the foregoing 50 and 40 item tests, two half length tests consisting of the 25 most discriminating items from within the male 50 item test and from within the female 50 items test were developed as male and female "short forms." The average discriminatory power of these two short forms were .32 and .41, respectively. Only six items were common to both the male and female short forms.

In all item pools, FCI items were keyed to favor the high success group by crediting the subject one point (for each item) if he chose the statement preferred by more high success than low success subjects and zero credit if he chose the statement preferred by more low success than high success subjects. FCI scores were then computed for all subjects, including the middle rated subjects. Mid-scores and ranges of these five item pools for males and females in these three subject groups are presented in Table 1. The frequency distributions of scores for the 50 item tests, the 25 item tests,

TABLE 1

MIDSCORES AND SCORE RANGES FOR HIGH, MIDDLE, AND LOW RATED MALES AND FEMALES FOR FIVE FCI TESTS

FCI Test	Test Sample	Midscores and Ranges[1] High (19M, 7F)	Middle (13M, 11F)	Low (10M, 15F)
Male 50	males	37 (25-44)	29 (20-39)	19 (14-27)
Female 50	females	41 (36-41)	32 (26-37)	22 (19-34)
Male 25	males	19 (10-23)	14 (7-20)	8 (4-12)
Female 25	females	21 (20-22)	15 (11-21)	11 (8-15)
Male-Female-40	males	29 (24-35)	27 (18-31)	20 (10-27)
Male-Female 40	females	28 (24-33)	25 (20-29)	20 (12-27)

[1]First entries are midscores; ranges are in parentheses.

and the 40 item male-female test are presented as bar graphs in Figures 1, 2, and 3, respectively.

Since all item selection and keying had been made without reference to responses by the middle rated subjects, the distribution of FCI scores for the middle group provided a partial validation of the various item pools. As may be noted from the Table 1 entries, the results were very supportive in that the midscores and score ranges for the middle rated subjects fell consistently between those of the low and high rated subjects. Figures 1 and 2 reveal this middleness to be especially pronounced for the 50 item tests and only slightly less using the 25 item tests. Score distributions for males on the female item pool and for females on the male item pools (not included in the table or figures) though also supportive of the "middleness" of the middle rated subjects, were not nearly so pronounced. These poorer separations support the need for separate tests for the two sex groups.

Examination of the frequency distributions of scores from the five FCI item pools for males and females were particularly encouraging in terms of the very clear separations obtained between the high rated and low rated groups. While some separation was, of course, "built in" since all items were keyed favoring the high

FIGURE 1

Frequency Distributions of the 50 Item
Male and Female FCI Tests

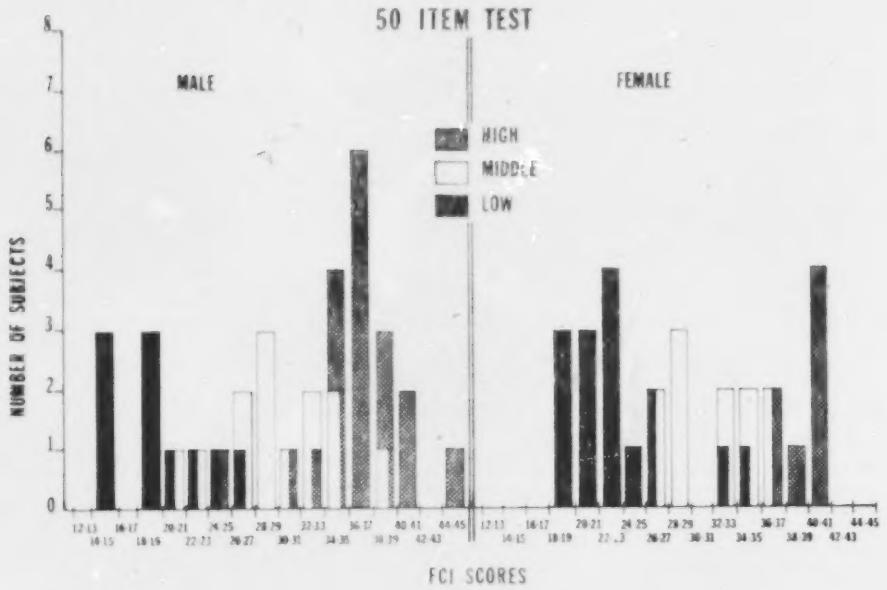


FIGURE 2

Frequency Distributions of the 25 Item
Male and Female FCI Tests

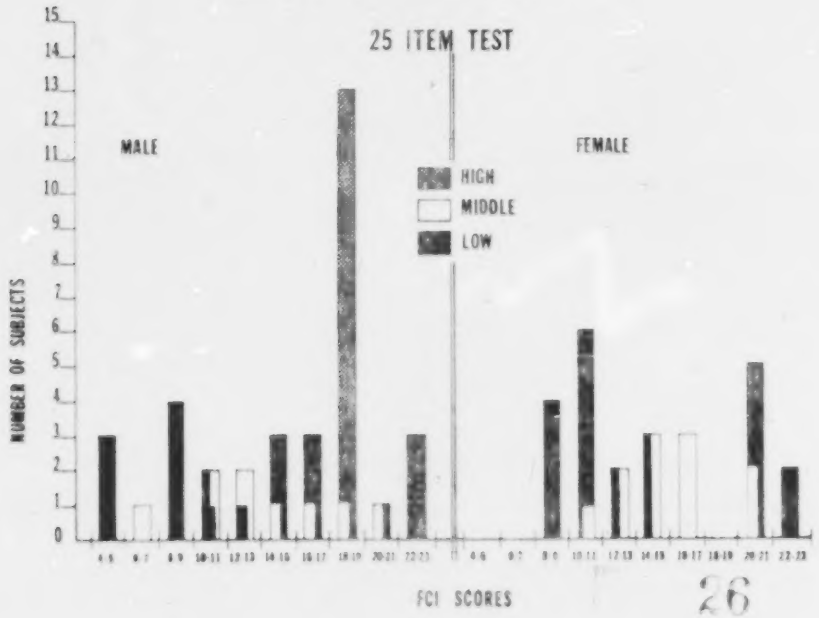
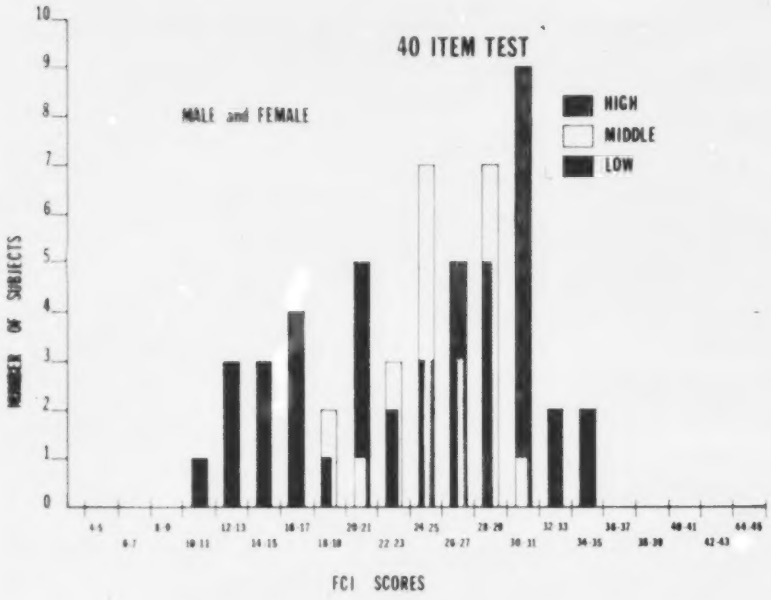


FIGURE 3

Frequency Distributions of the 40 Item
Male-Female FCI Test



group, "strong" separations were hardly assured.[1] On none of the five item pools did any of the low rated subjects score as high as the midscore of the high rated subjects on that item pool, nor, conversely did any of the high rated subjects score as low as the midscore of the low rated subjects. For the 50 item male and female item pools, the high-low group separations were especially sharp with only one of the 19 high rated males and none of the seven high rated females scoring as low as the highest scoring low rated same-sex subject. This very clean separation between high and low rated subjects even maintained for the 25 item pools (Figure 2) but with less within-group distribution due to the much shorter test.

The intercorrelations among the five forms of the FCI were examined in terms of product moment coefficients computed for the 75 clients providing the 183 item FCI data. These coefficients are presented in Table 2.

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[1]As earlier noted, the average proportionate difference between high and low subject responses on any item ranged in the .30's. For inclusion in either the male or female item pools, this size difference typically depended on only about a sixth more of the high rated subjects and a sixth less of the low rated subjects selecting an A or B alternative. On nearly all items, the majority of subjects in both groups preferred the same alternative, a condition hardly guaranteeing strong high-low group separations on summative scores.

TABLE 2

INTERCORRELATIONS AMONG FIVE FCI TESTS

(N=75)

FCI Test	M	σ	FCI Test M_{25}	M_{50}	F_{25}	F_{50}	MF_{40}
Male 25 Item	14.0	5.3	--	.93	.53	.50	.73
Male 50 Item	29.2	6.5	.93	--	.46	.40	.73
Female 25 Item	14.1	3.8	.53	.46	--	.89	.70
Female 50 Item	29.0	5.8	.50	.40	.89	--	.71
Male-Female 40 Item	24.5	5.7	.73	.73	.70	.71	--

Referring first to the test means and standard deviations, as would be expected, both of these statistics vary with test length, the longer tests having higher means and a greater spreading of scores. The means are, of course, directly translatable to average "difficulty" levels (the percentage of responses in agreement with the key) by dividing the means by the number of items in a given test form. In this regard all five FCI tests are quite alike with respondents choosing on the average about 60 percent of the keyed alternatives on all forms.

The variability in correlation coefficients among test forms is generally explainable in terms of item overlap among the various test forms. The highest coefficients (.93 for the male tests and .89 for the female tests) were between the short and long forms where all 25 items of the male and female short forms are contained, respectively, within the 50 item male and female forms. Similarly, the male-female 40 item test scores were found to substantially correlate with both the male and female 25 and 50 item tests with correlations all in the low .70's. Approximately half of the male-female 40 items were common to the 50 item male and to the 50 item female forms. The lowest coefficient, a moderate .40, was for the correlation between the male and female 50 item tests where the proportional item overlap was least, only 13 of the 50 items common to both tests.

A further examination of the experimental FCI was made in terms of the relationship of the FCI scores with the subject's age,

years out of school, counselor ratings on the community integration scale, combined counselor ratings on the community integration, employability, and social adjustment scales, and his Test of Social Inference score. Only the longer 50 item FCI tests were involved in these analyses. The product moment correlation coefficients presented in Table 3 were computed separately for males (using the 50 item male FCI score) and for females (using the 50 item female FCI score).

TABLE 3

CORRELATIONS OF THE 50 ITEM FCI SCORES WITH SUBJECT AGE, YEARS OUT OF SCHOOL, TSI, AND COUNSELOR RATINGS

Variable	Males (N=42)	Females (N=33)
Chronological Age	-.10	.02
Years Out of School	-.12	-.24
TSI	-.06	.41
Counselor Ratings		
Community Integration	.80	.79
Three Scales Combined	.78	.75

As may be seen from the Table 3 coefficients the 50 item FCI scores were uncorrelated with either the subject's ages or years out of school, coefficients of -.10 and -.12, respectively, for the males and of .02 and -.24 respectively, for the females. The relationship of the FCI and the TSI scores are less clear, a near zero coefficient for the male sample and moderate .41 (significantly different from zero at the .05 level) for the female sample. Recalling that the average TSI score achieved by the low rated clients (as a combined male and female group) were found to be lower than that of either the higher and middle rated clients, the very low correlation for the males was unexpected. Subsequent examination of the TSI data revealed that the bulk of the obtained TSI mean differences between high, middle and low rated subjects was due to disparities between the female group means with high, middle, and low rated males differing little on their TSI scores. Why this was so, however, remained unanswerable from any of the descriptive or score data collected by the project.

The FCI correlations with both counselor rating variables for both sex groups were in the high .70's. These substantial coefficients reflect the very pronounced high-middle-low group separations previously presented in Figure 1. As with these earlier discussed separations, the magnitude of the counselor rating-FCI score correlations far exceeds that compelled by the item selection and keying procedures. It will be recalled that the item selection procedure only took into account the subject's membership in either

an approximately upper third or lower third of the rating continuum, not, as in the correlation coefficient, his particular order within his upper or low group. Apparently, the collective items within either the 50 item male or female FCI tests substantially measure those same variables considered either overtly or covertly by the rehabilitation counselors in evaluating the "community adjustment" of the young retarded adult.

Analyses of the interrelationships among the five subtests of the 50 item FCI tests revealed generally similar correlation coefficients for the male and female tests with the highest coefficients (typically in the .50's) for the "Work Orientation" subtests which contained roughly twice as many items as any other subtest. The "Values and Goals" subtest coefficients, particularly for the female sample, were nearly as large. The larger part-whole correlations involving the total test score also followed subtest size with correlations near .90 for 21 item male and 17 item female "Work Orientation" subtest, these subtests comprising a full third of the total test. Considerations of such questions as factor structure of the FCI tests are unanswerable at this time in view of the small sample sizes involved. Similarly, recommendations to abridge the presently constituted 50 item test with, say, a two area composite focus on "Work Achievement" and "Values" would be premature. Sufficient data simply has not yet been collected.

A final examination was made of the FCI data in terms of the preferences expressed for the 69 FCI statements contained within

the 183 FCI items. In any set of paired comparison statements, each statement may be scored according to the number of times it is chosen over other statements. Since in a six statement set each statement appears five times, these preference scores may range from five to zero. Similarly, in a seven statement set the preference scores may range from six to zero. An examination of differences between high rated and low rated clients and/or between males and females with respect to these groups' preferred and nonpreferred self descriptions may be made in terms of group mean preference scores. Table 4 presents the average preferences for the 69 FCI statements for both subsamples and total samples. The wording of the FCI statements in the table are abbreviations of the fuller FCI statements used in the test itself. The three column groupings in the table are first for high and low rated males and females, then for the total male and total female group, and finally for the total high rated and total low rated group. It should be noted in reviewing this table that the consideration of any statements' preference score tacitly includes reference to all other statements in its subset which served as alternatives. It should further be noted that if one statement within a subset captures most of the preference responses, thereby earning a high preference score, other statements must accordingly have lower preference scores. The sum of all preference scores in a subset is fixed at either 15 for a six statement subset or 21 for a seven statement subset. In this regard, it may be particularly noted that the higher means for the "work

"Orientation" statements reflects in part the higher upper score possibility of 6.0 for subsets of seven statements as contrasted with the higher upper score possibility of 5.0 for subsets of six statements.

TABLE 4

MEAN PREFERENCE SCORES FOR 69 FCI STATEMENTS

FOR HIGH AND LOW RATED MALES AND FEMALES[1]

FCI Statement	High M (19)[1]	High F (7)	Low M (10)	Low F (15)	Total[2] M (42)	Total[2] F (33)	Total High (26)	Total Low (25)
GENERAL SOCIETAL								
1. Likes to feel useful	3.2	4.4	3.6	4.0	3.3	4.2	3.5	3.8
3. Tries to follow rules	3.2	2.8	3.6	3.3	3.4	2.9	3.1	3.4
5. Trusts most people to be fair	2.7	2.6	2.9	2.4	2.5	2.5	2.7	2.6
4. Believes luck counts a lot	2.1	1.7	1.6	2.0	2.1	1.9	2.0	1.8
6. Doesn't need to follow crowd	1.8	2.1	2.0	1.7	1.9	1.9	1.9	1.8
2. Believes in getting what he can	1.9	1.3	1.3	1.6	1.7	1.4	1.8	1.5
7. Believes in helping others	4.2	4.1	3.7	3.3	3.9	3.7	4.2	3.5
9. Should admit when wrong	3.3	4.3	3.3	3.2	3.2	3.7	3.5	3.2
11. Up to oneself to make it	2.4	2.6	2.4	2.5	2.4	2.7	2.5	2.5
10. Likes friends to help decide	2.2	1.4	2.8	2.3	2.4	1.9	2.0	2.5
12. Likes to be leader	1.9	0.4	1.4	1.3	1.8	1.1	1.5	1.4
8. Believes in evening score	1.0	2.1	1.4	2.2	1.3	1.8	1.4	1.2
SELF CARE								
17. Is pretty healthy	3.7	3.4	2.9	2.9	3.4	3.0	3.6	2.9
18. Know how to keep fit	3.2	2.7	3.1	3.3	3.2	3.2	3.1	3.2
14. Takes enough showers	2.7	2.6	1.7	2.2	2.4	2.5	2.7	2.0
13. Keeps room clean	1.7	3.0	2.5	2.6	2.0	2.5	2.0	2.6
15. Likes to wear what's in style	2.3	0.8	2.6	1.9	2.2	1.5	1.9	2.2
16. Prefers not to dress like all others	1.4	2.1	2.2	2.1	1.8	2.2	1.6	2.2

[1]Sample sizes are reported in parentheses under M(males) and F (females).

[2]Includes middle rated group.

TABLE 4 (continued)

FCI Statement	High M (19)[1]	High F (7)	Low M (10)	Low F (15)	Total M (42)	Total F (33)	Total High (26)	Total Low (25)
21. Takes good care of self	3.9	3.7	3.5	3.1	3.7	3.4	3.9	3.3
22. Tries to look clean and tidy	3.0	4.0	3.0	3.3	3.2	3.7	3.3	3.2
23. Has plenty of energy	3.6	2.6	2.3	2.7	3.1	2.5	3.4	2.6
20. Picks up after self	2.2	2.8	3.0	3.1	2.3	2.9	2.4	3.0
19. Looks stylish	1.3	0.8	1.5	1.6	1.3	1.3	1.2	1.6
24. Tries to look different from crowd	0.9	0.7	1.7	1.1	1.5	1.1	0.8	1.4
MANAGING MONEY								
26. Figures how to save money	3.0	3.1	3.0	3.3	3.0	3.4	3.1	3.2
29. Pays for own clothing	3.2	2.3	3.3	2.6	3.2	2.6	2.9	2.9
27. Money's important, not most important	2.7	2.6	2.7	2.7	2.6	2.5	2.6	2.7
25. Doesn't like borrowing	2.6	3.1	1.9	1.6	2.4	2.2	2.7	1.7
30. Doesn't need advice on spending	1.9	1.9	2.5	1.9	2.1	2.0	1.9	2.2
28. Surprised when out of money	1.7	2.0	1.6	2.7	1.5	2.3	1.8	2.3
35. Chooses what to buy	3.5	3.4	3.6	3.1	3.4	3.5	3.5	3.2
33. Saves to pay for things	2.8	3.6	3.0	3.4	3.0	3.4	3.0	3.2
32. Likes help handling money	2.4	2.7	2.0	2.3	2.2	2.5	2.5	2.2
36. Rather friends than money	2.4	1.4	2.7	2.5	2.6	2.1	2.1	2.6
34. Borrows when necessary	2.1	2.3	2.1	1.5	1.9	1.4	2.2	1.8
31. Sometimes buys what can't afford	1.8	1.6	1.6	2.1	1.9	2.1	1.8	1.9

[1]Sample sizes are reported in parentheses under M(males) and F (females).

[2]Includes middle rated group.

TABLE 4 (continued)

FCI Statement	High M (19)[1]	High F (7)	Low M (10)	Low F (15)	Total[2] M (42)	Total[2] F (33)	Total High (26)	Total Low (25)
WORK ORIENTATION								
42. Quickly learns work well	5.0	4.7	4.4	3.7	4.6	4.4	4.9	4.0
38. Fun to work with	3.6	3.1	3.7	3.8	3.6	3.4	3.5	3.8
40. Wants more responsibility	3.5	2.7	2.8	3.2	3.2	3.2	3.3	3.0
37. Works hard when needs to	3.6	3.7	2.6	3.3	3.3	3.3	3.1	3.0
41. Doesn't like [illegible] work days	2.7	3.8	2.4	3.1	2.7	3.2	3.0	2.8
43. Does more than his share	2.4	2.4	4.2	2.9	3.0	2.6	2.4	3.4
39. Quit job when has needed money	0.2	0.4	0.9	1.0	0.5	0.8	0.3	1.0
47. Doesn't mind working hard if fair	4.7	4.6	4.0	3.8	4.4	4.2	4.7	3.9
44. Dependable for finishing work	4.3	3.8	4.0	3.9	4.3	4.0	4.2	3.9
50. Finishes job for show	3.0	3.4	2.3	3.3	2.8	3.0	3.2	2.9
45. Not grumpy about work	3.2	3.4	1.5	2.7	2.6	2.9	3.3	2.0
46. Doesn't like being told when know how	2.1	3.0	3.5	2.5	2.8	2.8	2.4	2.9
48. Work gets to be a drag	2.5	1.7	2.2	1.7	2.3	1.9	2.3	1.9
49. Shouldn't do more than paid for	1.2	1.0	3.5	3.2	1.8	2.1	1.1	3.3
56. Interested in doing work well	4.5	4.1	4.0	4.2	4.3	4.1	4.4	4.1
55. Cleans up after work	3.2	3.0	3.8	3.5	3.2	3.4	3.1	3.6
53. Tries to get ahead	3.7	3.6	2.7	2.4	3.3	3.1	3.7	2.5
52. Likes to show how much he does	2.7	2.6	3.0	2.7	2.8	2.5	2.6	2.8

[1]Sample sizes are reported in parentheses under M(males) and F (females).

[2]Includes middle rated group.

TABLE 4 (continued)

FCI Statement	High M (19)[1]	High F (7)	Low M (10)	Low F (15)	Total[2] M (42)	Total[2] F (33)	Total High (26)	Total Low (25)
51. Rather work than lie around	1.8	3.7	2.8	2.9	2.3	3.1	2.3	2.8
57. Wants to try own ideas	2.6	1.8	2.5	2.7	2.4	2.5	2.4	2.6
54. Good to finish and forget job	2.5	2.1	2.2	2.6	2.6	2.3	2.4	2.4
VALUES AND GOALS								
61. Having a steady job	4.4	3.7	3.8	2.7	4.1	3.2	4.2	3.1
60. Being able to do things well	3.1	3.1	3.5	3.5	3.3	3.3	3.1	3.1
58. Having friends	3.1	2.8	2.3	2.9	2.7	2.8	3.0	2.7
63. Getting help from others	2.0	2.1	2.2	2.7	2.0	2.2	2.0	2.5
62. Saving for tomorrow	1.7	2.7	1.8	1.6	2.0	2.3	2.0	1.7
59. Having good luck	0.7	0.4	1.4	1.5	0.9	1.2	0.6	1.5
68. Depending on yourself	3.4	2.8	3.0	3.3	3.1	3.2	3.2	3.2
65. Being liked	3.2	3.0	1.9	2.9	2.6	2.8	3.1	2.5
66. Keeping out of trouble	2.7	2.0	3.4	2.9	3.2	2.8	2.5	3.1
67. Having someone to turn to	2.5	3.3	2.4	2.5	2.6	2.8	2.7	2.5
64. Having money	2.2	2.4	2.7	2.1	2.3	2.0	2.3	2.3
69. Getting the breaks	1.0	1.1	1.6	1.3	1.1	1.2	1.1	1.4

[1]Sample sizes are reported in parentheses under M(males) and F (females).

[2]Includes middle rated group.

Perhaps the most general statement which may be made regarding the Table 4 entries is the extensive sameness of the order of preference for statements within a subset by either male or female, high or low rated clients. For example, statement 1 "likes to be useful" was the highest rated (or tied for highest) statement in the first FCI subset by both high and low rated males as well as by both high and low rated females. This identical ranking across groups was true of practically all the 69 statements. Though a number of statements were more preferred by either one sex group or by one rating (high or low) group, only occasionally was the difference so large as to upset the across-group sameness in ranking.

Some apparently highly preferred and rejected self descriptions are evident in Table 4 data. Within the "general societal" subsets, the somewhat altruistic statements, "likes to feel useful" and "believes in helping others" were chosen by most respondents over most other alternatives, and the more self centered, aggressive statements, such as "believes in getting what he can," "believes in evening the score," and "likes to be leader," were generally rejected. Within the "self care" subsets, being "pretty healthy," taking "good care of self," and "knowing how to keep fit" were typically preferred over hygiene and tidiness statements and particularly over statements dealing with looking stylish or different from others. Within the "managing money" subsets, statements dealing with independence and self monitoring in spending and saving were most commonly preferred whereas statements suggesting overspending

and needing help were seldom chosen.

The most preferred self descriptions among 21 statements in the "work orientation" subsets included those statements stressing personal ability, interest, effort, and dependability. The very least preferred of all 69 FCI items involved quitting work when one had the money he or she needed. Only six persons (none of them high rated and four of them females) chose this statement as many as half the times it appeared. Two out of the three subjects tested rejected this statement each of the six times it appeared as an alternative. Other generally nonchosen alternatives involved general dislike and disinterest in work. The most preferred "value" statement was "having a steady job" followed by statements emphasizing personal ability and dependence upon oneself, and, in more middle positions, "having friends" and "being liked." Statements suggesting an importance of luck or in "getting the breaks" were most commonly rejected.

As may be noted by contrasting differences based upon the smaller samples (appearing in the left columns of Table 4) with those for the combined samples (appearing in the right columns of Table 4), a number of sex or high-low differences "wash out" when examining the combined high-low or the combined sex groups. Those sex differences which maintained include females as more dependent, less job oriented though more dissatisfied with idleness, less concerned with following the rules or getting ahead personally though more concerned with fairness, and somewhat less independent

in managing their money. Those differences maintaining between high and low rated groups included higher rated clients more frequently than low rated clients describing themselves, being healthy, showering and taking good care of themselves, valuing money, watching their spending and not liking borrowing, valuing having a steady job, working hard and getting ahead, learning quickly about their work, seldom grumpy, valuing being liked and most clearly rejecting "luck" as important for a "good life."

It perhaps should be stressed that none of these differences just cited, either between sexes or between high and low rated clients, even approach "all vs. none" comparisons. Considerable across subsample preference similarities were apparent for all statements. But more than these none differences, there is an especial risk in generalizing from non-predicted findings from a single sample. Though discussion and reflection upon differences in preferred self descriptions of males and females and of high and low "adjustment" clients is perhaps tempting (and sometimes fruitful), more generally it must be cautioned that strong assertions of the preference hierarchies or of subsample differences are to be avoided in advance of confirmatory data from additional samples.

Recommendations

The foregoing sections have presented a detailed description of project activities completed during an eleven month period. The project was inaugurated as an effort to explore and develop measures

of community adjustment of mildly retarded young adults. As discussed in the introductory section, the project plan represented a departure from the more traditional approach of starting with definitions of major or critical components (variables) of successful adjustment provided by professionals working with this retarded population. Instead, it was proposed that delineation of critical variables could more pragmatically evolve from direct comparisons of successful and non-successful adult retardates. Because of time and money constraints the study population was limited to former special education students, all current or recent vocational rehabilitation clients, presently living within a 25-30 mile radius of Eugene, Oregon. The study sample consisted of 44 males and 33 females, ages 17-29 years who had been rated by their vocational counselors on a multiple criterion scale of community adjustment requiring ratings of "community integration," "employability," and "social adjustment." Twenty-six subjects were identified as "high rated," 25 as "middle rated," and 26 as "low rated." Subsequent to their ratings all subjects were tested in their homes in an approximate two hour interview testing session.

The project findings include a description of similarities and differences between the successful and non-successful subjects in terms of (a) their reported social, schooling, employment, and present living situations, (b) measures of their social cue interpretation ability as determined by the Test of Social Inference (TSI), and (c) their choices among 69 paired self description

statements referring to their behaviors, attitudes, and values regarding personal care, managing money, general societal rules or guides, work orientation, and values and goals. These paired statements administered as a 183 item Forced Choice Self Description Inventory (FCI) provided especially encouraging results in that subsets of these items were found which clearly separated those people rated high by their vocational rehabilitation counselors from those rated low. The TSI data, though supporting the anticipated relationship between successful community adjustment and ability to interpret social scenes (depicted in the TSI pictures) provided far less clear high-low group separations.

The principal recommendations to be made from these findings have to do with further testing with the FCI. Item selection and keying based on a single sample is always hazardous. Though in this instance a middle rated group was withheld for subsequent confirmatory support for the empirical keying, only the testing of independent samples can provide convincing evidence of validity generalizability. Even aside from the problem of fortuitousness in item selection and keying, the dependence upon the singular sample of 77 clients divided into criterion groups on the bases of their vocational counselors' ratings legitimately raises questions as to possible uniqueness both of the particular client population ("Are Eugene area retarded young adults like those in other communities?") and of the judgments of the participating counselors ("Are the Eugene area counselors' judgments regarding their clients'

societal adjustments representative of the larger population of admissible judges?").

A further need for additional testing is the present limitation imposed on the data analysis by the small test data sample. Multivariate analysis requiring substantially larger samples are needed to examine the component factors of the FCI. Apart from guiding further test development, quite possibly such analyses would be expected to contribute toward a more explicated definition of community adjustment. Interpretations from the presently collected data (e.g., females being less job oriented and more concerned with fairness or low rated clients being more self centered and aggressive) must be considered tentative in advance of additional test data.

Additional study of retarded adults' social inferential skills as they may relate to successful community functioning is also to be recommended. Though the project data indicates such a relationship, in some respects the data are equivocal. Further testing, perhaps with longer tests of more difficult items, would be expected to clarify this relationship.

Finally, there is need for an improved procedure for obtaining confirmatory data regarding the client's self description responses. Though development of an empirical scoring key procedurally sidesteps this issue of veridicality, the more general underlying project goal of improved client training and remediatory response by rehabilitation workers requires a determination of the truthfulness or "reality" of the retardates' responses. In its present form, the Statement

Ranking Report instrument is apparently unsatisfactory as a source for confirmatory data regarding the FCI responses. Modifications of its format and instruction or the development of some different procedure is to be recommended.

The preceding are recommended as immediate further steps. Broader relevancies can, of course, be raised. As noted in the introduction to this report, there are the additional questions of generalizability of obtained adjustment measures to communities differing in size, geography, employment opportunities, etc., and of possible differences among subgroups of professional and non-professional persons working with retarded adults as to which behaviors these subgroups consider important for successful community living. But these are questions to follow, not precede, a strengthened data base for interpreting the present findings.

In total, the project activities were generated to promote improved instrumentation and measurement of the community adjustment of mildly retarded young adults. The procedures and instrumentation developed by the project suggest some initial successes. The next step clearly appears to be one of expanding the initial test sample.

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